

Work Order ID 79387

January-25-12 11:51:33 AM

79387

Page 1

Item ID: D212-664-207

Accept

N900040100

Setup Start ***NS1***

Revision ID:

Item Name: Crosstube Low Standard Aft

Stop ***NS2***

Start Date: 25/01/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 08/02/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan: M.L.J

Date: 12/01/25

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

| Sequence ID/ Work Center ID | Opération Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|

Draw Nbr

Revision Nbr

D212-664-247

Rev B (DEO)

100

100

DC

Document Control

DOCUMENT CONTROL

Memo

Photocopy bluefile and create labels as per PPP D212-664-207 CHG002

0.00

0.00

5 12/03/12

M.L.J 12-3-2
①

110

110

Packaging

Packaging

Pick Kit

Packaging

Memo

0.00

0.00

MO/RM

12/2/15

120

120

CNC Bend 2

CNC Alpha 160 Bender

BENDING MACHINE - CROSSTUBES

Memo

Bend tube as per Dwg D212-664-247 using CNC bender program and Folio FT

0.00

0.00

MO/RM

12/2/16

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|------------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief, Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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NOTE: Date & initial all entries

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Stop ***NS2***

Start Date: 25/01/2012 Start Qty: 1.00

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Required Date: 08/02/2012 Req'd Qty: 1.00

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Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|

130 QC15- Crosstube Dimensional Check

0.00

130

QC

Memo

0.00

Sizelitz

Quality Control

140

0.00

140

Crosstubes

Crosstubes

Memo

0.00

1-Drill Rivet holes as per Dwg D212-664-247 using DT8972.***Use T-Pin***

2-Drill pilot holes in tube as per Dwg D212-664-247 using DT8550 and DT8551

3-Ream hole to finish size in tube as per Dwg D212-664-247

4-Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D212-664-247

5-Scribe part # and batch # using vibrating stylus as per Dwg D212-664-247

TW

TW

12-2-21

12-2-21

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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NOTE: Date & initial all entries

Work Order ID 79387***79387***

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Item ID: D212-664-207

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N900040100Setup Start ***NS1***

Revision ID:

Item Name: Crosstube Low Standard Aft

Stop ***NS2***

Start Date: 25/01/2012 Start Qty: 1.00

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Cust Item ID:

Required Date: 08/02/2012 Req'd Qty: 1.00

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Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|

150 Crosstubes Chemical Conversion

0.00

150

HandFXtube

Memo

0.00

Hand Finishing Crosstubes

Chemical Conversion Coat Tube & Cuffs

SRM

12-2-23

160 QC3- Inspect Part Finish

0.00

160

QC

Memo

0.00

Quality Control

12 02 23 (1)

170 QC5- Inspect part completeness to step on W/O

0.00

170

QC

Memo

0.00

Quality Control

12 02 23 (1)

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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NOTE: Date & initial all entries

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NOTE: Date & initial all entries

Work Order ID 79387***79387***

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January-25-12 11:51:33 AM

Item ID: D212-664-207

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Crosstube Low Standard Aft

Start Date: 25/01/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 08/02/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***Stop ***NR2***

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|

210

0.00

210

Crosstubes

Crosstubes

Memo

0.00

1-Rivet and assemble Cuffs with T-Pin in the through bolt holes as per Dwg
D212-664-247. with Sika flex in Between tube & CuffA/R SIKAFLEX -241/-291 BATCH: 119999As 12 - 2 - 27

215

QC5- Inspect part completeness to step on W/O

0.00

215

QC

Memo

0.00

Quality Control

Inspect cuff with T-Pin

① 12-28

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
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NOTE: Date & initial all entries

Work Order ID 79387

79387

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January-25-12 11:51:33 AM

Item ID: D212-664-207

Accept

N900040100

Setup Start *NS1*

Revision ID:

Item Name: Crosstube Low Standard Aft

Stop *NS2*

Start Date: 25/01/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 08/02/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start *NR1*

Stop *NR2*

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|--------------------------------|---|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
| 220 | Spray Painting per QSI005 4.2 | 0.00 | | | | | | | |
| *220* | SprayPaint | | | | | | | | |
| | Memo | 0.00 | | | | | | | |
| | 1-Prime inside and outside crosstube as per QSI 005 4.2 | | | | | | | | |
| | 2-Paint outside crosstube with White Imron as per QSI 005 4.2 | | | | | | | | |
| | PRIME: | | | | | | | | |
| | Start Time: 10:14 | | | | | | | | |
| | Finish Time: 10:45 | | | | | | | | |
| | PAINT: | | | | | | | | |
| | Start Time: 3:00 | | | | | | | | |
| | Finish Time: 4:00 | | | | | | | | |
| 230 | QC14- Inspect Spray Paint | 0.00 | | | | | | | |
| *230* | | | | | | | | | |
| QC | Memo | 0.00 | | | | | | | |
| Quality Control | Wrap in plastic bag to protect from scratches | | | | | | | | |

AG

12-2-28

AG

12-02-29

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|--------------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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NOTE: Date & initial all entries

Work Order ID 79387

79387

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January-25-12 11:51:33 AM

Item ID: D212-664-207 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Crosstube Low Standard Aft
 Start Date: 25/01/2012 Start Qty: 1.00 ***1*** Cust Item ID:
 Required Date: 08/02/2012 Req'd Qty: 1.00 ***1*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|--------------------------------|---|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
| 240 | Crosstubes | 0.00 | | | | | | | |
| *240* | | | | | | | | | |
| Crosstubes | Memo | 0.00 | | | | | | | |
| Crosstubes | 1- Assemble as per Dwg D212-664-247 | | | | | | | | |
| | 1-Abrade mating surfaces of support and crosstube with 400 grit sandpaper, clean the area with 4105S wash 'n' wipe | | | | | | | | |
| | 2-Install supports with Proseal 890 per DSI9563 and QSI 015 A/R Proseal 890 Batch: <u>120072</u> | | | | | | | | |
| | 3- Torque bolts as per dwg | | | | | | | | |
| 250 | QC5- Inspect part completeness to step on W/O | 0.00 | | | | | | | |
| *250* | | | | | | | | | |
| QC | Memo | 0.00 | | | | | | | |
| Quality Control | | | | | | | | | |

(H)

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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NOTE: Date & initial all entries

Work Order ID 79387

79387

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January-25-12 11:51:33 AM

Item ID: D212-664-207

Accept

N900040100

Setup Start ***NS1***

Revision ID:

Item Name: Crosstube Low Standard Aft

Stop ***NS2***

Start Date: 25/01/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 08/02/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***

Stop ***NR2***

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|--------------------------------|--|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
| 255 | Pick Kit | 0.00 | | | | | | | |
| *255* | | | | | | | | | |
| Packaging | Memo | 0.00 | | | | | | | |
| Packaging | | | | | | | | | |
| 260 | QC4- 100% Inspect kits for completeness | 0.00 | | | | | | | |
| *260* | | | | | | | | | |
| QC | Memo | 0.00 | | | | | | | |
| Quality Control | | | | | | | | | |
| 270 | | 0.00 | | | | | | | |
| *270* | | | | | | | | | |
| Packaging | Packaging | | | | | | | | |
| Packaging | Memo | 0.00 | | | | | | | |
| Packaging | Identify and pack for shipping as per PPP D212-664-207 | | | | | | | | |

NEUC

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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NOTE: Date & initial all entries

Work Order ID 79387***79387***

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January-25-12 11:51:33 AM

Item ID: D212-664-207

Accept

N900040100Setup Start ***NS1***

Revision ID:

Item Name: Crosstube Low Standard Aft

Stop ***NS2***

Start Date: 25/01/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 08/02/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|--------------------------------|---|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
| 280 | QC21- Final Inspection - Work Order Release | 0.00 | | | | | | | |
| *280* | | | | | | | | | |
| QC | Memo | 0.00 | | | | | | | |
| Quality Control | | | | | | | | | |

MF
12-03-07

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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NOTE: Date & initial all entries

Picklist Print

January-25-12 11:51:37 AM

Page 1

Work Order ID: 79387

79387

Parent Item: D212-664-207

D212-664-207

Parent Item Name: Crosstube Low Standard Aft

Start Date: 25/01/2012

Required Date: 08/02/2012

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:A New Issue 07.09.12 EC verified by: JLM
 IPP Rev:B ECN 1100p 08-01-11 DD verified by: EC
 IPP Rev:C ECN 1121 08-02-25 DD verified by: eC
 IPP Rev: D QC5 replaced by QC15 at step 5 KJ Verified by: ec

| Component Item ID/ Item Name | Replacement Item ID | Mfg/ Purch | Bin Item | Primary Location | Last Location | Route Seq ID | Unit of Measure | Qty on Hand | Qty per Kit | Total Qty | Qty Issued | Date Issued | Status |
|---|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|--------------|---------------|----------------|--------|
| D212-664- 207TRNRevA | | Manufactured | No | | | 110 | Each | 0.0000 | 1 | 1 | | | |
| *D212-664-207TRNRevA* | | | | | | | | | ** | | | | |
| Crosstube Turning Detail | | | | | | | | | | | | | |
| D3660-1 | | Manufactured | No | | | 140 | Each | 4.0000 | 2 | 2 | | | |
| *D3660-1* | | | | | | | | | ** | | | | |
| CUFF | | | | | | | | | | | | | |
| <div> <div>Location</div> <div>ST482</div> <div>53501</div> <div>76260</div> </div> <div> <div>Loc Qty</div> <div>4</div> <div>1</div> <div>3</div> </div> <div> <div>Loc Code</div> <div></div> <div></div> <div></div> </div> | | | | | | | | | | | | | |
| CR3212-4-06 | | Purchased | No | | | 220 | Each | 286.0000 | 44 | 44 | | | |
| *CR3212-4-06* | | | | | | | | | ** | | | | |
| CHERRY RIVET | | | | | | | | | | | | | |
| <div> <div>Location</div> <div>ST331</div> <div>112492</div> <div>112794</div> <div>119717</div> <div>120187</div> </div> <div> <div>Loc Qty</div> <div>286</div> <div>18</div> <div>8</div> <div>203</div> <div>57</div> </div> <div> <div>Loc Code</div> <div></div> <div></div> <div></div> <div></div> <div></div> </div> | | | | | | | | | | | | | |

4

MO/RM 12/2/15

TW 12-2-21
 AS 12-2-27

44

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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NOTE: Date & initial all entries

Picklist Print

January-25-12 11:51:37 AM

Work Order ID: 79387

79387

Parent Item: D212-664-207

D212-664-207

Parent Item Name: Crosstube Low Standard Aft

Start Date: 25/01/2012

Required Date: 08/02/2012

Start Qty: 1.00

Required Qty: 1.00

D3595-063-530

Manufactured No

240

Each

79.0000

4

4

D3595-063-530

RUBBER CUSHION

**

AS 12-2-29

Location

Loc Qty

Loc Code

MAT052

79

63407

6

67185

6

70067

18

72745

8

75783

41

2

2

D2940-1

Manufactured No

240

Each

13.0000

2

2

D2940-1

Support

**

AS 12-2-29

Location

Loc Qty

Loc Code

LG

3

76729

3

LG052

10

76729

10

2

MS21920-28

Purchased No

240

Each

59.0000

4

4

MS21920-28

Clamp(per MIL-DTL-8783C)

**

AS 12-2-29

Location

Loc Qty

Loc Code

FG

5

105884

5

LG050

54

116839

2

118713

4

119285

1

119920

17

120054

30

4

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|--------------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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NOTE: Date & initial all entries

Picklist Print

January-25-12 11:51:37 AM

Work Order ID: 79387

79387

Parent Item: D212-664-207

D212-664-207

Parent Item Name: Crosstube Low Standard Aft

Start Date: 25/01/2012

Required Date: 08/02/2012

Start Qty: 1.00

Required Qty: 1.00

D3428-1

Manufactured No

255

Each

25.0000

1

1

D3428-1
Placard

**

sp

sp

Location

Loc Qty

Loc Code

ST042

25

76508

5

78933

20

MS21042L6

Purchased No

255

Each

1,202.000

6

6

MS21042L6
Nut

**

sp

sp

Location

Loc Qty

Loc Code

ST300

1202

117677

25

118384

3

118927

48

119075

926

120308

200

AN960JD616

NAS1149D0663J

Purchased No

255

Each

0.0000

18

18

AN960JD616
Washer

**

M119075

sp

sp

AN6-40A

Purchased No

255

Each

124.0000

4

AN6-40A
Bolt

**

12/3/11

sp

Location

Loc Qty

Loc Code

ST342

124

119749

24

120187

100

4

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|--------------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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NOTE: Date & initial all entries

Picklist Print

Page 4

January-25-12 11:51:37 AM

Work Order ID: 79387

79387

Parent Item: D212-664-207

D212-664-207

Parent Item Name: Crosstube Low Standard Aft

Start Date: 25/01/2012

Required Date: 08/02/2012

Start Qty: 1.00

Required Qty: 1.00

AN6-41A

Purchased

No

255

Each

45.0000

2

2

**

12/3/12

SP

AN6-41A

Bolt

Location

Loc Qty

Loc Code

ST342

45

119749

20

120187

25

2

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

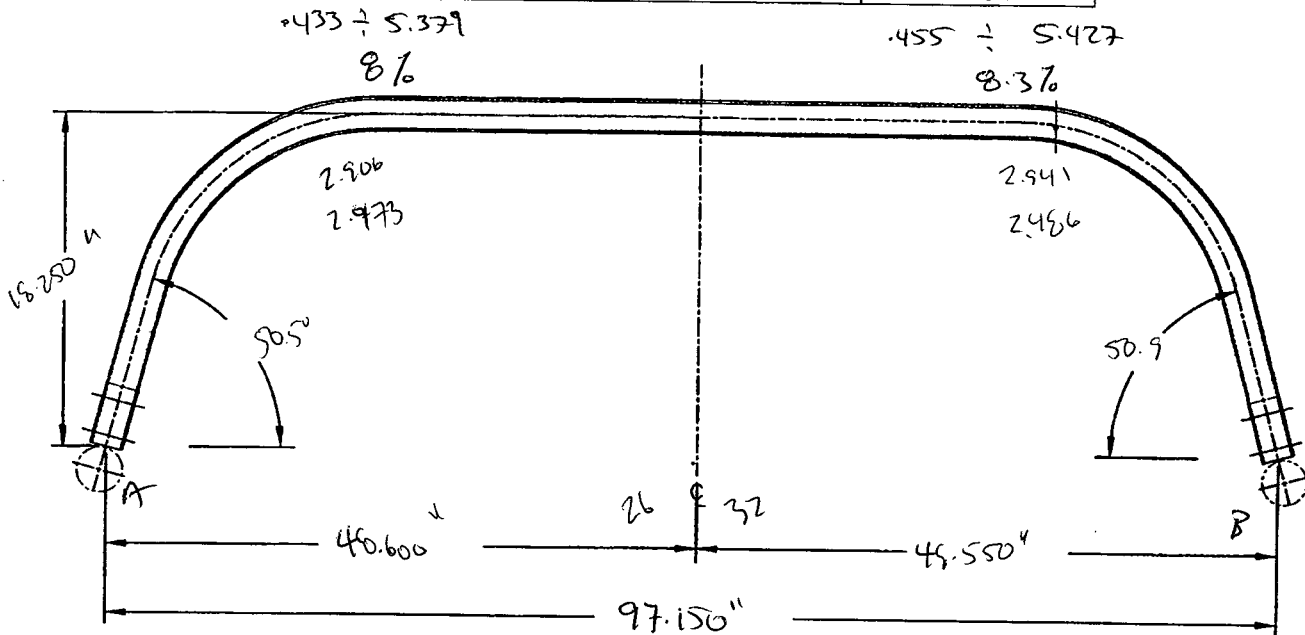
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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NOTE: Date & initial all entries

| | | | |
|--|--|--------------|--------------|
| DART AEROSPACE LTD | | Work Order: | 79387 |
| Description: Crosstube Low Aft (205/212) | | Part Number: | D212-664-207 |
| Inspection Dwg: D212-664-247 Rev: B | | Page 1 of 1 | |

| Required Dimension | Min | Max |
|--------------------|-------|-------|
| Height | 18.16 | 18.42 |
| 1/2 Span | 48.55 | 48.81 |
| Angle | 49 | 52 |
| Total Span | 97.1 | 97.62 |



| Comments |
|---------------------------------|
| Since A2 8% crush @ 26 passes. |
| Since B2 8.3% crush @ 32 passes |
| * See note # 10. |

| | |
|-----------------|--------------|
| QC15 Inspection | \checkmark |
| Date | 12/02/17 |

| Rev | Date | Change | Revised by | Approved |
|-----|----------|-----------------|------------|----------|
| A | 08.02.29 | New Issue | KJ/JM | |
| B | 10.04.01 | Dwg Rev updated | KJ | |

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
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| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

NOTE: Date & initial all entries

B

| Item | Qty -247 | Qty -247B | Part Number | Description |
|------|-------------|--------------|-------------------|---|
| 1 | X | | D212-664-247 | CROSSTUBE ASSEMBLY (205/212 LOW AFT) |
| 2 | | X | D212-664-247B | CROSSTUBE ASSEMBLY (214 LOW AFT) |
| 3 | 1 | 1 | D6008-132 | CROSSTUBE |
| 4 | 2 | 2 | D2940-1 | SUPPORT |
| 5 | 4 | 4 | D3595-063-530 | RUBBER CUSHION |
| 6 | 2 | 2 | D3660-1 | CUFF |
| 7 | 4 | 4 | MS21920-28 | CLAMP (OR MS21920-30) |
| 8 | 44 | 44 | CR3212-4-06 | RIVET (OR M7885/3-4-06) |
| 9 | A/R | A/R | MAGNOBOND 6398 | ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE) |
| 10 | A/R | A/R | SIKAFLEX-241/-291 | SEALANT (OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT) |

GENERAL NOTES:

- MATERIAL: MANUFACTURED FROM D6008-132
FINISHED LENGTH = 128.268±0.020 (BEFORE BENDING/TRIMMING)
- FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- UNITS: INCHES UNLESS OTHERWISE NOTED.
- BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- IDENTIFICATION: SCRIBE DART PART NUMBER "D212-664-XXX" AND BATCH NUMBER ON INSIDE OF CUFF
USING VIBRATING STYLUS.
- WEIGHT: D212-664-247 = 36.6 lbs (PER IIN-D212-664)
D212-664-247B = 36.6 lbs (PER IIN-D212-664)
- PART IS SYMMETRIC ABOUT CENTERLINE.
- WHEN MACHINING TAPER, RUN CUTTER OFF PART. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD
BE SMOOTH.
- BEND PROGRESSIVELY WITH A MINIMUM OF 8 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6%
BASED ON O.D., EXCEPT UP TO 10% IS ALLOWED IN AREA NOTED.
- LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- INSTALL D2940-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 TO THE SURFACE OF
D2940-1 THAT WILL BE IN CONTACT WITH THE CROSSTUBE PER QSI 015. LET CURE FOR 12 HOURS AFTER
INSTALLATION AND PRIOR TO PACKAGING.
- INSTALL MS21920-28 CLAMPS (OR -30) WITH D3595-063-530 RUBBER CUSHIONS TO SECURE THE D2940-1
SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE OF CROSSTUBE SUPPORT.
- EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE
SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS.
DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE
UNACCEPTABLE.
- TORQUE CLAMPS 80 TO 100 IN.-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS
NOT BOTTOMED-OUT AFTER TORQUING.
- INSTALL D3660-1 CUFF AFTER CHEMICAL CONVERSION COAT BUT BEFORE PAINT, WITH A LAYER OF
SIKAFLEX-241/-291 OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT BETWEEN CUFF AND CROSSTUBE.
SEAL EDGE OF CUFF TO ENSURE NO GAPS.
- TOUCH-UP HOLES WITH CHEMICAL CONVERSION COAT.

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 79383 H.C.S.
12/01/25

DEO ATTACHED

11.09.28
UNDER REVIEW
11/26/17

RELEASED
2009-10-29
MP

| | | | |
|------------|---|--|--------------|
| B | REVISE GENERAL NOTES/PART LIST; UPDATE TO CURRENT STANDARDS: ADD -247B (ZN C4-2, D5-2) | RF | 09.09.30 |
| A | NEW ISSUE | CP | 07.07.07 |
| REV. | DESCRIPTION | BY | DATE |
| DESIGN | RF | DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA | |
| DRAWN | RF | DRAWING NO. | REV. B |
| CHECKED | RF | D212-664-247 | SHEET 1 OF 4 |
| MFG. APPR. | RF | TITLE | SCALE |
| APPROVED | RF | CROSSTUBE (205/212 LOW AFT) | NTS |
| DE APPR. | RF | COPYRIGHT © 2007 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD. | |
| DATE | 09.09.30 | | |

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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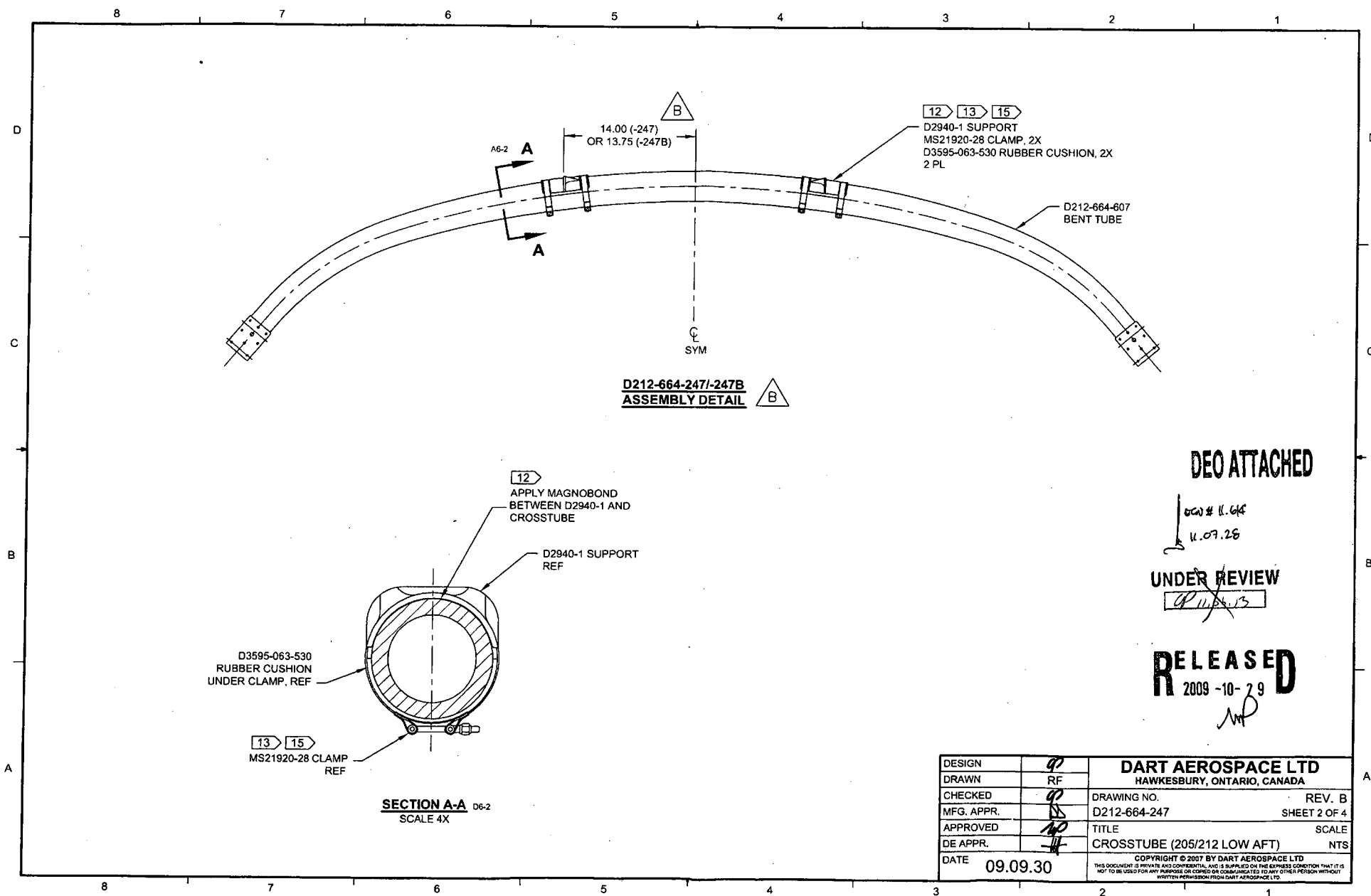
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|--------------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
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| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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NOTE: Date & initial all entries

79387



DEO ATTACHED

OCW # 11.64
11.07.28

UNDER REVIEW

11.07.13

RELEASED
2009-10-29

| | | | |
|------------|----------|--|--------------|
| DESIGN | 97 | DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA | |
| DRAWN | RF | | |
| CHECKED | 97 | DRAWING NO. | REV. B |
| MFG. APPR. | 97 | D212-664-247 | SHEET 2 OF 4 |
| APPROVED | 97 | TITLE | SCALE |
| DE APPR. | 97 | CROSSTUBE (205/212 LOW AFT) | NTS |
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| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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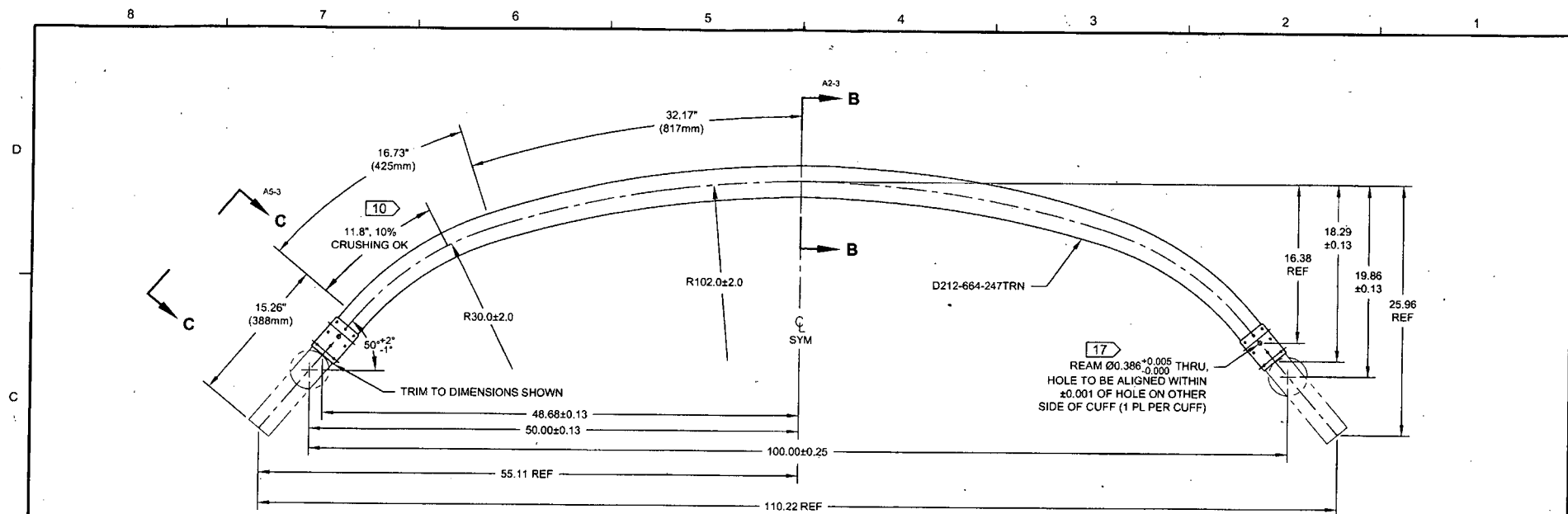
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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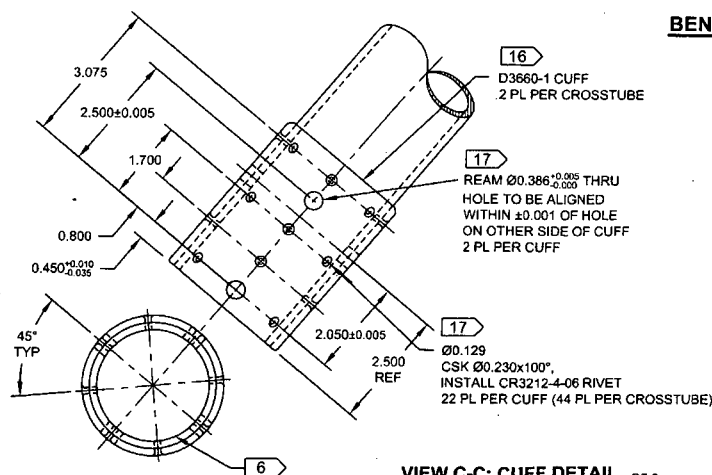
NOTE: Date & initial all entries

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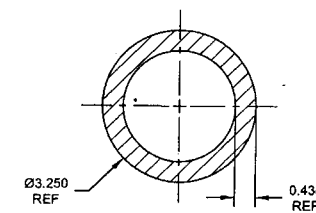


D212-664-607
BENDING AND DRILLING DETAIL

10 B



VIEW C-C: CUFF DETAIL D7-3
SCALE 4X



SECTION B-B D4-3
SCALE 4X

DEO ATTACHED

UNDER REVIEW

4/11.06.13

RELEASED
2009-10-29

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|------------|-----------|--|--------------|
| DESIGN | 97 | DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA | |
| DRAWN | RF | | |
| CHECKED | 97 | DRAWING NO. | REV. B |
| MFG. APPR. | 97 | D212-664-247 | SHEET 3 OF 4 |
| APPROVED | 97 | TITLE | SCALE |
| DE APPR. | 97 | CROSSTUBE (205/212 LOW AFT) | NTS |
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|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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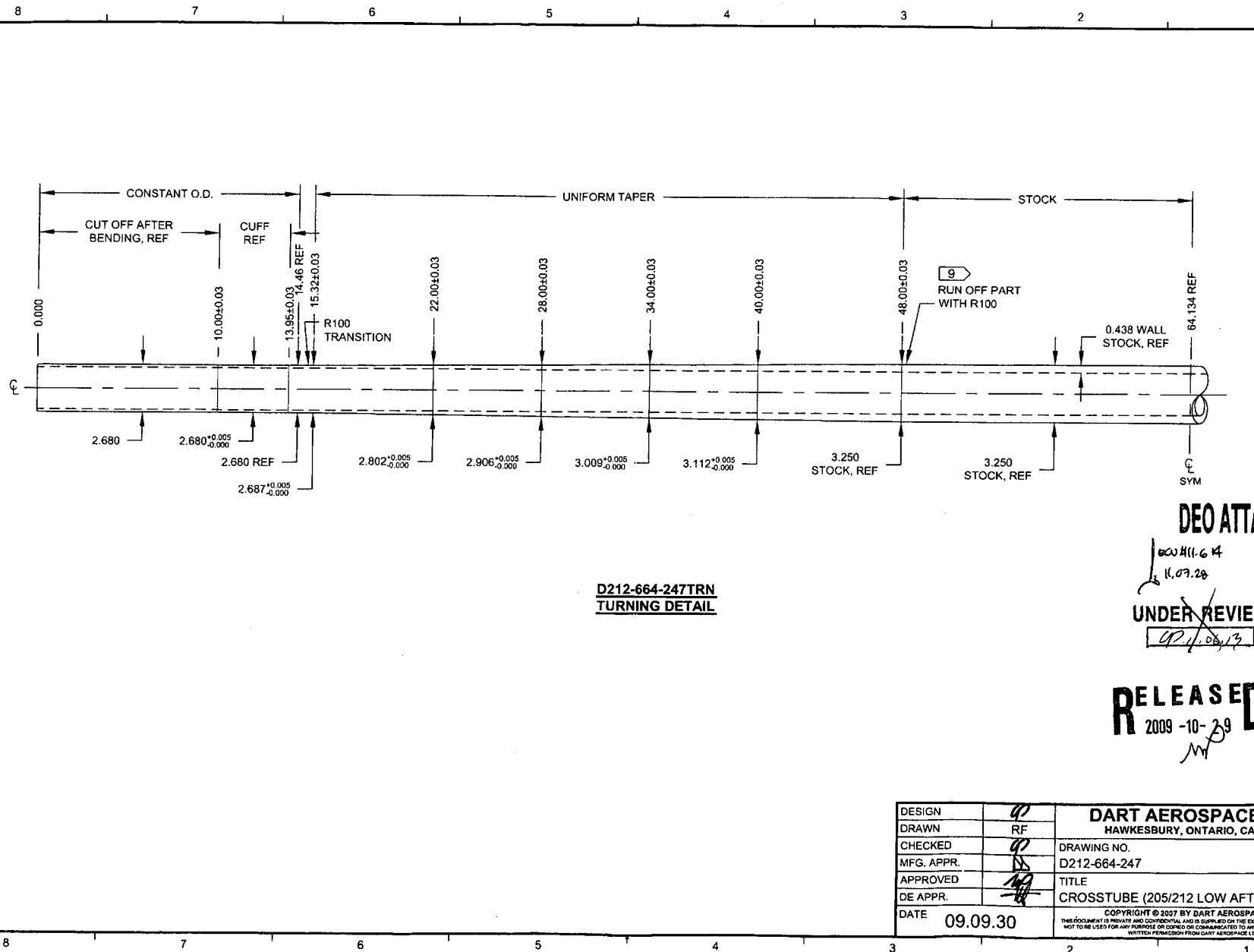
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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NOTE: Date & initial all entries

79383



D212-664-247TRN
TURNING DETAIL

DEO ATTACHED

1000 H11.6 M
11.07.28

UNDER REVIEW

UP.1.08.13

RELEASED
2009-10-29

| | | | |
|------------|----------|---|--------------|
| DESIGN | RF | DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA | |
| DRAWN | RF | | |
| CHECKED | RF | DRAWING NO. | REV. B |
| MFG. APPR. | RF | D212-664-247 | SHEET 4 OF 4 |
| APPROVED | RF | TITLE | SCALE |
| DE APPR. | RF | CROSSTUBE (205/212 LOW AFT) | NTS |
| DATE | 09.09.30 | COPYRIGHT © 2007 BY DART AEROSPACE LTD. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD. | |

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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NOTE: Date & initial all entries

79387

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|-----------------------------|--|------------------|---|--|--------------------------------|---------------------------|--------------|
| DRAWING NO. D212-664-247 | TITLE CROSSTUBE ASS'Y (205 LOW AFT) | REV. B | DART AEROSPACE LTD ENGINEERING ORDER | | D.E.O. NO. D212-664-247-B-1 | SHEET NO. SHEET 1 OF 1 | SCALE NTS |
| DRAWN P | CHECKED ASS | MFG. APPR. AB | APPROVED MD | | DE APPR. H | | |
| DATE 11.07.15 | DATE 11.07.20 | DATE 11.07.21 | DATE 11/07/21 | | DATE 11.07.21 | | |

PURPOSE:
REPLACE MAGNOBOND WITH PROSEAL.

CHANGE:

IS:

| Item | Qty -247 | Qty -247B | Part Number | Description |
|------|-------------|--------------|-----------------|-------------------------------|
| 9 | A/R | A/R | PROSEAL 890 B-2 | SEALANT, AMS-S-8802 CLASS B-2 |

WAS:

| | | | | |
|---|-----|-----|----------------|---|
| 9 | A/R | A/R | MAGNOBOND 6398 | ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE) |
|---|-----|-----|----------------|---|

NOTE 12 & 15, SHEET 1 IS AMENDED AS FOLLOWS:

IS:

- 12) TO INSTALL D2940-1 SUPPORT: ABRASE MATING SURFACE OF SUPPORT AND CROSSTUBE WITH 180-GRIT SANDPAPER AND REMOVE RESIDUE WITH MEK (OR EQUIVALENT). APPLY A 0.04" TO 0.07" THICK LAYER OF PROSEAL 890 CLASS B-2 (OR AMS-S-8802 CLASS B-2) SEALANT TO MATING SURFACE OF SUPPORT.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. **PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 890 SEALANT HAS CURED FOR 72 HOURS.**

WAS:

- 12) INSTALL D2940-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 TO THE SURFACE OF D2940-1 THAT WILL BE IN CONTACT WITH THE CROSSTUBE PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

RELEASED
2011-07-28
MD

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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NOTE: Date & initial all entries



LIQUID PENETRANT TEST REPORT

P- 14907

| | | | | | | | |
|------------------|------------------------------|-----------------|--------------------------|---------------|-------------|-------------------------------------|-----------------------------|
| CLIENT | <u>DAT AeroSpace</u> | DATE | <u>FEB 27 2012</u> | PAGE | <u>1</u> | OF | <u>1</u> |
| ATTENTION | <u>LINDA</u> | ACUREN JOB No. | <u>185-12-0053</u> | TIME | <u>AM</u> | <input checked="" type="checkbox"/> | PM <input type="checkbox"/> |
| ADDRESS | <u>1270 ABERDEEN ST.</u> | PO/NO No. | <u>---</u> | WORK LOCATION | <u>HOME</u> | | |
| | <u>ON</u> | ACCEPTANCE STD. | <u>ASTM 1417/051-038</u> | REV./DATE | <u>2008</u> | | |
| PROJECT | <u>F.P.I. on CROSS TUBES</u> | | | | | | |
| ITEM(S) EXAMINED | <u>(8) CROSS TUBES</u> | | | | | | |

| | | | | |
|-----------------|--|-------------------------------------|---------------|-------------------------------------|
| JOB DESCRIPTION | PROCEDURE No. | LT <u>002</u> REV./DATE <u>2008</u> | TECHNIQUE No. | LT <u>002</u> REV./DATE <u>2008</u> |
| PART No. | <u>SEE RESULTS</u> | | | |
| SCOPE | <u>A DET FLUORESCENT LIQUID PENETRANT INSPECTION WAS CONDUCTED ON THE EXTERNAL AREA.</u> | | | |

| | | | | | |
|-------------------|---|---|--|--|--|
| TEST DETAILS | | | | | |
| METHOD | <input checked="" type="checkbox"/> FLUORESCENT | <input type="checkbox"/> VISIBLE | <input checked="" type="checkbox"/> WATER WASH | <input type="checkbox"/> SOLVENT REMOVABLE | <input type="checkbox"/> POST EMULSIFIED |
| FAMILY BRAND | <u>DAWN FLUX</u> | | BLACK LIGHT S/N | <u>16459</u> | <input type="checkbox"/> OUTPUT > 1000 μ W/cm ² |
| PENETRANT | <u>2107</u> | MINIMUM DWELL TIME | <u>450</u> | MIN. | <input type="checkbox"/> FLASHLIGHT |
| PENETRANT REMOVER | <u>A20</u> | MINIMUM DRY TIME | <u>>10</u> | MIN. | <input type="checkbox"/> TROUBLELIGHT |
| DEVELOPER | <u>SAFES2</u> | MINIMUM DWELL TIME | <u>10</u> | MIN. | <input type="checkbox"/> OTHER |
| DEVELOPER TYPE | <input type="checkbox"/> NON AQUEOUS | <input checked="" type="checkbox"/> AQUEOUS | <input type="checkbox"/> DRY | LIGHT METER S/N | <u>10988 60</u> |

| | | | | | |
|---------------------|---------------------------------------|--|---|---------------------------------------|--|
| TEST SURFACE | | | | | |
| SURFACE CONDITION | <input type="checkbox"/> AS GROUND | <input type="checkbox"/> AS WELDED | <input type="checkbox"/> MACHINED | <input type="checkbox"/> SHOT BLASTED | <input checked="" type="checkbox"/> CLEAN BARE METAL |
| SURFACE TEMPERATURE | <input type="checkbox"/> < -4°C/ 20°F | <input type="checkbox"/> -4°C/ 20°F TO 10°C/50°F | <input checked="" type="checkbox"/> 10°C/50°F TO 52°C/125°F | <input type="checkbox"/> > 52°C/125°F | |

| | |
|--|--|
| RESULTS- | <input checked="" type="checkbox"/> METRIC <input type="checkbox"/> IMPERIAL |
| <div><div><div>1 CROSS TUBE W.O. # 75949</div><div>1 CROSS TUBE W.O. # 75948</div><div>1 CROSS TUBE W.O. # 79388</div><div>1 CROSS TUBE W.O. # 79387</div><div>1 CROSS TUBE W.O. # 80134</div><div>1 CROSS TUBE W.O. # 77538</div><div>1 CROSS TUBE W.O. # 77537</div></div><div>RECORD INDICATION</div><div>5/12/12</div></div> | |

Scope of Services
The agreement of Acuren Group Inc. to perform services extends only to those services provided for in writing. Under no circumstances shall such services extend beyond the performance of the requested services. It is expressly understood that all descriptions, comments and expressions of opinion reflect the opinions or observations of Acuren Group Inc. based on information and assumptions supplied by the owner/operator and are not intended nor can they be construed as representations or warranties. Acuren Group Inc. is not assuming any responsibilities of the owner/operator and the owner/operator retains complete responsibility for the engineering, manufacture, repair and use decisions as a result of the data or other information provided by Acuren Group Inc. In no event shall Acuren Group Inc.'s liability in respect of the services referred to herein exceed the amount paid for such services.

Standard of Care
In performing the services provided, Acuren Group Inc. uses the degree, care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty, expressed or implied, is made or intended by Acuren Group Inc.

| | |
|-------------------------|---------------------------------|
| SIGNATURES | |
| CLIENT REPRESENTATIVE | <u>Andrew Sheldon</u> |
| TECHNICIAN (SIGNATURE): | <u>[Signature]</u> |
| NAME (PRINT): | <u>Michael S. [Signature]</u> |
| CGSB LEVEL | <u>F</u> SNT LEVEL <u>4</u> |
| CGSB REG. No | <u>0606</u> |
| CGSB LEVEL | <u>---</u> SNT LEVEL <u>---</u> |
| CGSB REG. No | <u>---</u> |
| DTR # | <u>E 63814</u> |
| REPORT REVIEWED BY: | <u>---</u> |
| NAME | INITIALS |